CLAIMS

What is claimed is:

1.   A method of managing a memory of a computer to share configuration information with a plurality of processes, the method comprising the steps of:

(a) allocating a region of a memory of a computer for storing configuration information usable by at least one process of a plurality of processes, the region of memory being shareable with the plurality of processes;

(b) receiving initial configuration information;

(c) storing the initial configuration information in the region of memory;

(d) receiving subsequent configuration information;

(e) storing the subsequent configuration information without disturbing or impeding access by the plurality of processes to the initial configuration information already stored in the region of memory; and

(f) after storing the subsequent configuration information, making the subsequent configuration information accessible to the at least one process of the plurality of processes.

2.   The method of Claim 1, wherein the method further includes a step (g) of associating revision level data with the subsequent configuration information indicating that the subsequent configuration information has been more recently stored in the region of memory than the initial configuration information.

3.   The method of Claim 2, wherein the method further includes a step (h) of providing the revision level data associated with the subsequent configuration information to the at least one process of the plurality of processes to enable the at least one process to determine whether the process is presently using the most recently stored configuration information.

4.   The method of Claim 1, wherein the step (f) of making the subsequent configuration information accessible includes changing a pointer to direct the at least one process to the stored subsequent configuration information instead of the stored initial configuration information.

5. The method of Claim 1, wherein the method further includes a step (g) of, after receiving subsequent configuration information, determining whether the region of memory has sufficient capacity to store the subsequent configuration information or does not have sufficient capacity to store the subsequent configuration information.

6. The method of Claim 5, wherein the region of memory comprises a first region of memory, wherein the method further includes a step (h) of, upon determining that the first region of memory does not have sufficient capacity to store the subsequent configuration information, allocating a second region of a memory of the computer for storing the subsequent configuration information, and wherein the step (e) of storing the subsequent configuration information includes storing the subsequent configuration information in the second region of memory.

7. The method of Claim 6, wherein the method further includes a step (i) of, after storing the subsequent configuration information in the second region of memory, updating validity data associated with the first region of memory to indicate that the first region of memory no longer contains valid configuration information for use by the at least one process of the plurality of processes.

8. The method of Claim 7, wherein the method further includes a step (j) of, after updating validity data, providing the validity data associated with the first region of memory to the at least one process of the plurality of processes to enable the at least one process to determine whether the process is presently using valid configuration information.

9. The method of Claim 6, wherein the method further includes a step (i) of, after storing the subsequent configuration information in the second region of memory, storing a pointer in the memory of the computer which points to the second region of memory.

10. The method of Claim 9, wherein the subsequent configuration information corresponds to a particular configuration parameter having a unique identifier, and wherein the

method further includes a step (j) of associating the unique identifier and the stored pointer pointing to the second region of memory.

11. The method of Claim 10, wherein the particular configuration parameter includes a port.

12. The method of Claim 10, wherein the particular configuration parameter includes a genre.

13. The method of Claim 1, wherein step (c) of storing the initial configuration information includes determining whether storage of the initial configuration information requires the storage of a character string value and if so, storing the character string value in a sub-region of the region of memory dedicated to the storage of character strings.

14. The method of Claim 13, wherein step (c) of storing the initial configuration information further includes, after storing the character string value, establishing pointers in at least one other sub-region of the region of memory which enable the at least one process of the plurality of processes to read the character string value.

15. The method of Claim 1, wherein step (c) of storing the initial configuration information includes determining whether storage of the initial configuration information requires the storage of a numeric value and if so, storing the numeric value in a sub-region of the region of memory dedicated to the storage of numeric values and of pointers to character string values.

16. The method of Claim 15, wherein step (c) of storing the initial configuration information further includes, after storing the numeric value, establishing pointers in at least one other sub-region of the region of memory which enable the at least one process of the plurality of processes to read the numeric value.

17.   The method of Claim 1, wherein the step (e) of storing the subsequent configuration information includes determining whether the subsequent configuration information comprises information constituting a revision of at least one portion of the initial configuration information and if so, copying at least one portion of the initial configuration information that is not revised by the subsequent configuration information to a previously unused portion of the region of memory appropriate for the type of value of the at least one portion of the initial configuration information and inserting the subsequent configuration information at an appropriate memory location relative to the copied portions of the initial configuration information.

18.   The method of Claim 17, wherein if the type of value of the at least one portion of the initial configuration information corresponds to a character string, the previously unused portion of the region of memory appropriate for the type of value of the at least one portion of the initial configuration information includes a sub-region of the region of memory dedicated to the storage of character string values.

19.   The method of Claim 17, wherein if the type of value of the at least one portion of the initial configuration information corresponds to a number, the previously unused portion of the region of memory appropriate for the type of value of the at least one portion of the initial configuration information includes a sub-region of the region of memory dedicated to the storage of numeric values.

20.   The method of Claim 1, wherein the region of memory is a first region of memory for storing configuration information associated with a first configuration parameter of a first type, and wherein the method further includes a step (g) of allocating a second region of memory for storing configuration information associated with a second configuration parameter of a second type.

21.   The method of Claim 20, wherein the first type comprises a port.

22.   The method of Claim 20, wherein the second type comprises a genre.

22.   The method of Claim 1, wherein the initial configuration information pertains to a particular configuration parameter, and wherein the subsequent configuration information pertains to the same particular configuration parameter.

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23.   The method of Claim 1, wherein the particular configuration parameter constitutes a port.

24.   The method of Claim 1, wherein the particular configuration parameter
10   constitutes a genre.

25.   The method of Claim 1, wherein the processes of the plurality of processes are executable only at the computer.

15   26.   The method of Claim 1, wherein the region of memory includes a contiguous region of memory.

27.   A computer-readable medium having computer-executable modules comprising:
        (a) a first module for receiving configuration information associated with a port or
20   a genre communicated from a persistent store of a communicatively connected computer and for storing and updating the configuration information in respective data tables absent locking of the data tables during storing and updating, the data tables being shareable with appropriate processes of a plurality of processes; and
        (b) a second module for retrieving configuration information from a data table and
25   providing the retrieved configuration information to at least one process of the plurality of processes.

28.   The computer-readable medium of Claim 27, wherein the first module is further operable to store configuration information comprising a connection string associated with the
30   port in a region of computer memory adapted for the storage of character strings.

29. The computer-readable medium of Claim 27, wherein the first module is further operable to update configuration information comprising a connection string associated with the port in a region of computer memory adapted for the storage of character strings while not impeding the retrieval of previously stored configuration information for the port.

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30. The computer-readable medium of Claim 27, wherein the communicated configuration information comprises data in extensible markup language.

31. The computer-readable medium of Claim 27, wherein the configuration
10   information associated with the port includes a port name.

32. The computer-readable medium of Claim 27, wherein the configuration information associated with the port includes a protocol used by the port.

15   33. The computer-readable medium of Claim 32, wherein the protocol is selected from the list of protocols including: (i) HTTP; (ii) TDS; (iii) SMB; and (iv) RPC.

34. The computer-readable medium of Claim 27, wherein the configuration information associated with the port includes a port type.

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35. The computer-readable medium of Claim 34, wherein the port type is selected from the list of port types including: (i) client; and (ii) server.

36. The computer-readable medium of Claim 27, wherein the data table
25   corresponding to the port stores a status for the port.

37. The computer-readable medium of Claim 36, wherein the status for the port is selected from the list of statuses including: (i) read; (ii) write; and (iii) dead.

38.   The computer-readable medium of Claim 27, wherein the first module is further operable to maintain configuration information corresponding to at least one wire in the data table associated with the port.

39.   The computer-readable medium of Claim 38, wherein the configuration information corresponding to a wire includes a wire identifier.

40.   The computer-readable medium of Claim 38, wherein the configuration information corresponding to a wire includes a wire connection string.

41.   The computer-readable medium of Claim 38, wherein the configuration information corresponding to a wire includes a status.

42.   The computer-readable medium of Claim 41, wherein the status for the wire is selected from the list of statuses including: (i) read; (ii) write; and (iii) dead.

43.   The computer-readable medium of Claim 27, wherein the first module is further operable to update configuration information comprising a character string value associated with the genre in a region of computer memory adapted for the storage of character strings while not impeding the retrieval of previously stored configuration information for the genre.

44.   The computer-readable medium of Claim 27, wherein the first module is further operable to update configuration information comprising a numeric value associated with the genre in a region of computer memory adapted for the storage of numbers while not impeding the retrieval of previously stored configuration information for the genre.

45.   The computer-readable medium of Claim 27, wherein the first module is further operable to maintain revision level data for the data table associated with the port.

46.   The computer-readable medium of Claim 27, wherein the first module is further operable to maintain revision level data for the data table associated with the genre.

47.   The computer-readable medium of Claim 27, wherein the first module is further operable to allocate a region of computer memory for each data table, the region of memory comprising: a first sub-region for storing control information, including a data value indicating whether the data table contains valid or invalid configuration information; a second sub-region for storing offset information used during retrieval of configuration information; a third sub-region for storing key information used during retrieval of configuration information; a fourth sub-region for storing numeric values and pointers to string values, each of which are pointed to by pointers of the third sub-region; and a fifth sub-region for storing character string values pointed to by the pointers of the fourth sub-region.

48.   The computer-readable medium of Claim 27, wherein the second module is further operable to limit access to the data table to those processes having authorization to access the data table.

49.   A method of controlling access to configuration information in a distributed processing system, comprising the steps of:

          (a) receiving, at a first computer of a distributed processing system having a plurality of computers, configuration information usable by at least one process of a plurality of processes executable at the first computer;

          (b) receiving, at the first computer, access control information associated with the configuration information and including an identifier of each respective process of the plurality of processes which has authorization to access the configuration information;

          (c) storing the configuration information in a first region of memory of the first computer shareable by the plurality of processes;

          (d) storing the access control information in a second region of memory of the first computer shared by the plurality of processes; and

          (e) determining whether a particular process is authorized to access the configuration information through use of the access control information.

50.   The method of Claim 49, wherein the method further comprises a step (f) of allowing reading of the configuration information from the first region of memory by the particular process upon determining that the particular process is authorized to access the configuration information.

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51.   The method of Claim 49, wherein the method further comprises a step (f) of denying reading of the configuration information by the particular process upon determining that the particular process is not authorized to access the configuration information.

10   52.   The method of Claim 49, wherein the method further comprises a step (f) of receiving, from the particular process prior to step (e), an identifier associated with the particular process, and wherein step (e) includes comparing the received identifier associated with the particular process against each identifier of the access control information stored in the second region of memory.

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53.   The method of Claim 49, wherein step (a) includes receiving the configuration information from a persistent store associated with a second computer of the plurality of computers.

20   54.   The method of Claim 49, wherein step (a) includes receiving the access control information from a persistent store associated with a second computer of the plurality of computers.

55.   The method of Claim 49, wherein the processes of the plurality of processes are

25   executable only at the first computer.

56.   The method of Claim 49, wherein step (a) includes receiving configuration information at any time during operation of the first computer.

30   57.   The method of Claim 49, wherein step (b) includes receiving access control information at any time during operation of the first computer.

58.   The method of Claim 49, wherein the configuration information includes data usable by the first computer for communicatively connecting to a second computer of the plurality of computers.

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59.   The method of Claim 58, wherein the data of the configuration information includes a character string identifying the second computer.

60.   The method of Claim 49, wherein the configuration information includes data which enables the first computer to access data present at a second computer of the plurality of computers.

61.   The method of Claim 49, wherein the configuration information includes a numeric value.

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62.   The method of Claim 49, wherein the configuration information includes at least one alphabetic character.

63.   The method of Claim 49, wherein the configuration information includes information used by at least one process of the plurality of processes during execution at the first computer.

64.   A computer-readable medium having stored thereon a data structure for facilitating the sharing of configuration information between a plurality of processes, comprising:

(a) a first data table stored in a first region of a range of memory addresses in the medium, the first data table including configuration information usable by at least one process of the plurality of processes, the first data table being shareable by the plurality of processes; and

(b) a second data table stored in a second region of a range of memory addresses, the second data table including an identifier for each process of the plurality of processes which has permission to access the first data table.

65.   The computer-readable medium of Claim 64, wherein when a particular process of the plurality of processes requests configuration information of the first data table, the second data table is examined to determine whether the particular process has permission to access the

5   first data table.

66.   The computer-readable medium of Claim 65, wherein if the particular process is determined to have permission to access the first data table, the particular process is allowed to read the configuration information of the first data table.

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67.   The computer-readable medium of Claim 65, wherein if the particular process is determined not to have permission to access the first data table, the particular process is not allowed to read the configuration information of the first data table.

15   68.   The computer-readable medium of Claim 65, wherein the particular process has an identifier associated therewith, and wherein during examination of the second data table, the identifier of the particular process is compared against an identifier for a process of the plurality of processes which has permission to access the first data table.

20   69.   The computer-readable medium of Claim 64, wherein the first data table includes data indicating whether the first data table should be used or should not be used by a process having permission to access the first data table.

70.   The computer-readable medium of Claim 64, wherein the computer-readable

25   medium resides at a first computer of a plurality of computers of a distributed processing system, and wherein the configuration information of the first data table is not accessible to the other computers of the plurality of computers.

71.   The computer-readable medium of Claim 64, wherein the computer-readable

30   medium resides at a first computer of a plurality of computers of a distributed processing system,

and wherein the configuration information of the first data table is modifiable at any time during operation of the first computer and without restarting the first computer.

72.   The computer-readable medium of Claim 64, wherein the first data table includes a revision level indicator identifying the present revision level of the configuration information present therein.

73.   The computer-readable medium of Claim 64, wherein the configuration information includes connection string information corresponding to a resource from which other information is obtainable.

74.   The computer-readable medium of Claim 64, wherein the configuration information includes a numeric value.

75.   The computer-readable medium of Claim 64, wherein the configuration information includes an alphabetic character.